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PROFESSOR STUMPF'S AFFECTIVE PSYCHOLOGY

By E. B. TITCHENER

Professor Stumpf has set forth his psychology of the Feelings in two articles, *Ueber den Begriff der Gemüthsbewegungen* (1899)¹ and *Ueber Gefühlsempfindungen* (1907).² We shall be concerned here with the theory of 'algedonic sensations,' and more especially with Stumpf's recent 'defence of it';³ but we begin with a brief survey of his general position.

Two remarks may be made by way of preface. It is characteristic of Stumpf's writing, first, that he is not content merely to expound his views, but must also justify them as he proceeds; and this trait, admirable in itself, commits him at times all too whole-heartedly to argument and historical reference and polemical counter-argument. The exposition then comes off only at second best, and questions that press upon the reader are left without answer. It is further characteristic of these articles that they devote a good deal of space to terminology. That again, in the present state of affective psychology, is natural and even necessary: the point to be made is, however, that Stumpf inclines to rely upon context for his own meaning, and is a little impatient with his opponents if they (as they sometimes must) take a similar course.

Our task, therefore, is not always easy, and our right understanding of Stumpf's doctrine is not always assured. In the large, nevertheless, the doctrine is clear enough. Emotions are acts or functions; the sensory feelings or elementary feelings are phenomena, are in fact sensations, and have no claim to the name of feeling. In Brentano's phraseology, emotions or feelings proper are psychical, and sensory feelings or algedonic sensations are physical phenomena. Let us see how this position is worked out.

I. DEFINITION OF EMOTION

A logical definition regards the class to be defined as a species, and names the proximate genus and the difference. What, then, is the *differentia* of emotion? It differs, Stumpf says, from the sensory feeling of agreeableness and disagreeableness in that it is invariably based upon a judgment: the term judgment is taken very widely, to include even "the very first beginnings of an apprehension and interpretation of impressions of sense." It differs from desire as passive from active; that is to say, it is directed always upon some matter-of-fact, present, past or future, while desire is directed upon some ought-to-be. We may accordingly define it as "a passive state-of-

¹ *Zeits.*, xxi., 47 ff. (referred to in this paper as BG).

² *Ib.*, xlii., 1 ff. (referred to as GE).

³ *Apologie der Gefühlsempfindungen*, *ib.*, lxxv., 1916, 1 ff. (referred to as A). The monograph *Erscheinungen und psychische Funktionen* (1907) will be referred to as EF.

feeling which bears upon a judged matter-of-fact."⁴ The factor of judgment is immanent, belongs to the substance of emotion; but the emotion proper is the feeling based on the judgment, and its qualitative peculiarity depends in the first instance upon this immanent psychical basis.⁵ The qualitative peculiarity itself, the intimate nature of the emotive feeling (*Affectgefühl*), cannot be defined either in general or in the special case; it can only be experienced.⁶

And the genus? The genus of emotion is, obviously, feeling; but it is noteworthy that Stumpf takes feeling entirely for granted. Although it is of interest to know "what characters unite into a group the enormous variety of these [emotive] states and distinguish them from the other psychical states," he occupies himself wholly with their discrimination from "the other feelings," from sense-feeling, mood, desire and passion.⁷ The common character of emotions in this context is that the underlying judgment is passed upon some matter-of-fact; but, of course, there are plenty of such judgments that do not serve as basis of emotion. Even if the matter-of-fact always relates to "one's own or another's life" (and Stumpf does not positively assert this⁸), there are again plenty of *such* judgments that do not serve as basis of emotion. In any case: granted that the nature of the underlying judgment might by some means be specified and distinguished, and granted that judgment is an immanent factor in emotion, still we have the right to ask how feeling, the emotive genus, differs from sensation, from idea, from judgment itself; how Stumpf decides whether the psychical state before him is or is not a feeling; what it is (in this first paper) that justifies him in bracketing together sense-feeling, mood, emotion, desire and passion. The question, apparently, did not occur to him; he names his genus, and then goes in search, within the genus, of his emotive difference.

The later papers take us a little further. We read of a "peculiar interweaving of intellectual with emotional functions;"⁹ and though the metaphor is mechanical, and tells us nothing of the actual process, it still helps us to understand Stumpf's statement that the qualitative peculiarity of emotive feeling depends primarily upon the immanent judgment; we gather that the two functions cooperate in some uniform way that parallels, perhaps, the blending or fusion of sensations. We read, again, that emotions as contrasted with sensations are not spatial, not revivable in image, not transferable by association; and, more generally, that "no predicate of the phenomenal world (unless it be time) attaches to the psychical functions."¹⁰ The negatives are better than nothing; but we should like to know the emotive *Merkmale eigener Art*, the characters that correspond with the distinctness of perception, the evidence of judgment, the degree of generality of concept. On the positive side emotion is once described (in a particular context) as "a certain affective attitude (*gemütliche Stellungnahme*) which we term acceptance or rejection, or in its later developments search and avoidance, etc. (Brentano's 'love' and 'hate')." ¹¹ Since judgment also is acceptance or rejection, the emphasis is evidently on the adjective *gemütlich*. We find nothing more, except that emotions may be positive and negative (*Freude-Trauer, Lust-Unlust*);¹² but

⁴ BG, 48 f., 51, 56.

⁵ BG, 58, 96 f.; EF, 38.

⁶ BG, 57. ⁷ BG, 48.

⁸ BG, 54. ⁹ EF, 11.

¹⁰ GE, 14, 25 note, 36; EF, 11.

¹¹ GE, 15. ¹² BG, 89; EF, 26; GE, 17.

judgments too are affirmative and negative. We are, plainly, not taken very far.

The "psychological nucleus" of emotion is at any rate a *gemütliche Stellungnahme* or feeling proper¹³ based upon an immanent judgment of matter-of-fact. In actual experience, however, and from the purely descriptive standpoint, our emotions are complicated, very variously and in very different degree, by organic sensations, muscular sensations, algedonic sensations. "The tone, the color, the temperature of the emotion is undoubtedly conditioned in part upon these sensations;" "the whole partcolored variety of this [the emotive] group depends on the cooperation of organic sensations."¹⁴ A fact which does not make for clearness of exposition! For if Stumpf can complain of certain opponents that the difference of *degree* which is all the difference they recognize between sense-feeling and emotion allows them to play fast and loose with illustrations, they can in turn complain of him that the distinction of *kind* which he draws between emotion and algedonic sensation does not prevent his appealing to an emotive *Gesamtzustand* for instances of sensory feeling. The difficulty, indeed, is more than expository; it is observational. Stumpf remarks of a particular experience: "I used to regard it as a purely abstract comprehension, or again as an act of approval or disapproval or the like; but I am now disposed to believe that a sensory agreeableness or disagreeableness is involved." Here Stumpf himself hesitates to decide whether a given experience is all function or is partly phenomenon; and yet "the difference [between phenomenon and psychical function] is the cleanest-cut we know."¹⁵ One can hardly resist the impression, in spite of Stumpf's denial, that affective act and algedonic sensation are somehow *like* each other, and that there is a qualitative resemblance between *Lust* and *Lustempfindung*, between *Unlust* and *sinnliche Unannehmlichkeit*.¹⁶

After all, then, it is only in the large that Stumpf's doctrine is clear. If we ask for the distinctive character of feeling, we find the adjective *gemütlich* and the remark that the old and convenient distinction of emotional and intellectual functions will be used without prejudice in regard to its definitive accuracy.¹⁷ If we ask for the laws which govern the interplay of the two functions in emotion, we find the phrase *eigenthümliche Verflechtung*. If we ask for the method whereby we may discover and identify function and phenomenon, we find that the two are as different as possible, that they are intermixed in our experience, and that Stumpf has sometimes confused them.—It is difficult to believe that those who have held out against Brentano will be convinced by Stumpf's argument.

II. ALGEDONIC SENSATIONS

Stumpf classes together, as algedonic sensations, "first, the purely bodily pains, whether they are set up from within or from without the organism; secondly, the feeling of bodily well-being in its more gen-

¹³ *GE*, 17. ¹⁴ *BG*, 93 f.; *GE*, 7 f.; *EF*, 27, 37 f.; *A*, 9, 35 f.

¹⁵ *GE*, 37; *EF*, 11.

¹⁶ *BG*, 57, speaks of the *eigenthümliche Qualität eines bestimmten Affects*. Yet quality is a predicate of phenomena; and according to *EF*, 11, no phenomenal predicate, not even intensity, attaches to functions; time (*EF*, 4, 11) is the one possible exception to the rule.

¹⁷ *EF*, 5.

eral and in its more special forms, the latter including the pleasure-component in tickle, the feeling produced by itch, and the sexual feelings; and lastly the agreeableness and disagreeableness that may be connected, in the most various degrees of gradation, with the sensations of all or nearly all the 'special' senses, with temperatures, odors, tastes, tones, colors."¹⁸ Tickle and itch seem here to be dual experiences, composed of a specific cutaneous quality together with a pleasure-quality; but in a later passage tickle-sensations, itch-sensations and lust-sensations are given without qualification as instances of pleasure-sensation.¹⁹—Some of these sensations (cutaneous pain, tickle, pains resulting from excessive sensory stimuli) are evoked by stimulation of peripheral organs, though even so they seem to be characteristically dependent upon central processes. Others (the 'affective tones' of moderately intensive sense-impressions) are due to central coexcitation, though they on their side owe something to secondary effects at the periphery.²⁰

The algedonic sensations thus fall into two groups. The list embraces, on the one hand, cutaneous and organic pains and cutaneous and organic (vegetative) pleasures; and, on the other, the 'affective tones' of the sensations of special sense. The former are peripherally, the latter are centrally initiated. Stumpf naturally tries, by means of the qualifying clauses, to bring the groups into relation: there is little at first sight to connect the cutaneous pain which in normal subjects may be aroused, as an isolated sense-quality, by stimulation of a pain-spot, with the 'sensory disagreeableness' of an odor, which is essentially a 'concomitant sensation of central origin.' The attempt, however, can hardly be judged successful. For the influence of central processes upon members of the first group is limited, if Stumpf's examples are typical, to a change of intensity or degree (analgesia, hypalgesia, hyperalgesia), while the peripheral *Nebenwirkungen* which affect members of the second group are left altogether indeterminate. The class of algedonic sensations is, in fact, held together simply by a bond of function, by the intimate and complex relations which the sensations so named sustain to the feelings proper.²¹ If that bond is disregarded, the class falls apart into a group of isolable qualities, which are peripherally excited, and a group of inseparable (or at least not demonstrably separable) qualities, which are centrally co-excited. The line of cleavage may be somewhat blurred by qualifying clauses, but the cleavage is there. It is clear that Stumpf has introduced into psychology "an unique and hitherto unknown class of sensations."²²

The word 'class' is, to be sure, ambiguous. We might, for instance, speak of a class of temporal sensations, which should include hearing and kinaesthesia; we might, as Hamilton came near doing and Brentano has actually done, speak of a class of sensations with emotional character, as opposed to the class of indifferent sensations;²³ we might speak of the class of concomitant sensations. Stumpf, however, uses 'class' in the meaning of sense-department. He meets the charge of novelty and uniqueness by a reference to the late discovery of muscular sensations; he points out that the algedonic sense (*Gefühlssinn*) by

¹⁸ GE, I f. ¹⁹ GE, 22. ²⁰ GE, 22, 29; A, I, 23 f.

²¹ GE, 15. ²² A, 3.

²³ W. Hamilton, *Lectures on Metaphysics*, ii., 1859. 494; F. Brentano, *Untersuchungen zur Sinnespsychologie*, 1907, 119 f.

its duality of principal qualities resembles the sense of temperature.²⁴ Surely he must see that there is a difference, and that the inclusion within a single sense-department of two heterogeneous groups of elements is *prima facie* a ground of objection to his theory? Not, of course, a decisive ground; we must follow where the facts of observation lead us; but still a *prima facie* ground. No one objects to concomitant sensations.²⁵ The strange thing is that concomitant sensations should, within a certain modality, be ranked alongside of independent and peripherally excited sensations as content-processes of equal rank and title, constitutive of the sense-department.

III. THE CRITICS

Stumpf's *apologia* is in the main a reply to four critics, Brentano, Kuelpe, Titchener and Ziehen. We shall notice only such points of the controversy as seem to be of general significance for affective psychology.

*Brentano*²⁶

Brentano's criticism is little more than a restatement of his own position,²⁷ and Stumpf justly observes that a counter-statement, however authoritative, is not a rebuttal. The outsider, nevertheless, will take a critical interest in Brentano's views. For Brentano affirms that sensory pleasure and sensory pain are not sense-qualities but affects, emotions, feelings in the true sense, of one piece with intellectual pleasure and displeasure. "For Stumpf they are physical, for me they are psychical phenomena." We thus have a flat disagreement between two representatives of a functional psychology of Brentano's type. Yet the difference between phenomenon and psychical function is, for Stumpf, the cleanest-cut we know; not a single predicate of the phenomenal world (unless it be time) attaches to the psychical functions; and no functional predicate can be assigned to phenomena! If Stumpf himself may confuse (as he admits he may) the phenomenal and functional components in a given experience, and if Brentano can claim as functional what Stumpf is at great pains to prove phenomenal, the inference seems plain that there is something wrong with method.

Brentano gives his method and his criterion: the emotive nature of sensory pleasure and sensory pain is guaranteed by the evidence of

²⁴ *A*, 3, 32; *GE*, 22.

²⁵ *A*, 28 ff. The non-pathological concomitant sensations which Stumpf names (subjective combinational tones, tickle in the nose, after-images, contrast-sensations, the qualities that fill in the blind spot, etc.) are all sensations which we know independently as well as in concomitance. The synaesthesias appear to form a class apart. The photisms of colored hearing, e. g., may show more than one color, may even show visually incompatible colors, at the same place of the (auditory) field, and in certain of their attributes are more akin to auditory than to visual sensations (E. Bleuler, *Zur Theorie der Sekundärem-pfindungen*, *Zeits.*, lxx., 1913, 7, 8, 10, 21). They present no analogy, so far as our knowledge of them goes, to the algedonic sensations. The status of the 'musical quality' of tones—Stumpf's last example—is as yet uncertain.

²⁶ Brentano, *op. cit.*, 121 ff.; *A*, 4 ff.

²⁷ With the addition remarked in Note 23 above.

introspection.²⁸ Stumpf rejoins that the guarantee is derived, not from psychology, but from theory of knowledge. Many of us will agree; and still the reply is not satisfactory. For it is to be remembered that this much of 'theory of knowledge' is made by Brentano an integral part of his empirical psychology, and that, if Brentano's book is not truly an empirical psychology, then neither is a great part of Stumpf's own monograph on *Erscheinungen und psychische Funktionen*. The outsider, indeed, will be tempted to say summarily that he does not see how a functional psychology of the Brentano stripe can be written without a theory of knowledge; and, if he does not as psychologist subscribe to the distinction of act and content, will attribute the differences between Stumpf and Brentano to the comingling of logical and scientific method.

*Kuelpe*²⁹

Kuelpe maintains, against sensationalistic theories in general, that the feelings have no sense-organs and leave behind them no "ideational residua or tendency to ideation;" and, against Stumpf's theory of central sensory coexcitation in particular, that all known concomitant sensations have sense-organs, that they stand in unequivocal associative relation to their excitants, and that they are reproduced. Experiments made by a Method of Favorable Opportunities (4 different series, 7 observers, over 240 observations) lead him to the conclusion that feelings can in no case be imaged or reproduced; "die Vorstellbarkeit fehlt." Four observers gave no report of affective image; one showed "a certain doubt in a few unusually difficult cases," but inclined on the whole to deny the image; two (one of whom could not complete the experiments) occasionally reported images, or experiences that might be interpreted as imaginal, but all such reports were inconclusive.

Stumpf replies that some persons cannot image tones or odors. The force of this reply depends upon the meaning of certain sentences in Kuelpe's paper. He does not appear to say that everybody can image every kind of sensation; his position seems to be that every kind of sensation can be imaged by somebody. There is, however, 'a certain doubt.' Stumpf urges, further, that Kuelpe has mixed together sensory feelings (algedonic sensations) and emotions. The experiment thus involves a *petitio principii*; for algedonic sensations might be reproducible, and emotions not. We may rejoin, on Kuelpe's behalf, first, that the four experimental series dealt separately with affectively toned sensations, with strongly affective situations, with emotions, and with empathy; and secondly that the few doubtful cases which are described in detail are drawn from the third and fourth series as well as from the first. Had Stumpf's algedonic sensations (the affective tones of the first series) shown any preponderant tendency to leave images, that fact would assuredly have been noted.

All in all, Stumpf takes Kuelpe's experiments more lightly than they deserve. They are, indeed, too briefly reported, and they are by no

²⁸ Both terms are technical! See F. Brentano, *Psychologie vom empirischen Standpunkte*, i., 1874, 35, 119.

²⁹ O. Kuelpe, *Ein Beitrag zur Gefühlslehre*, in *Bericht über den III. internationalen Kongress für Philosophie*, 1909, 546 ff., 554 f.; *Zur Psychologie der Gefühle*, in *VIème Congrès international de psychologie*, 1910, 183 ff., 224 ff.; *A*, 10 f.

manner of means final. On the positive side, however, they were carefully planned, they covered a wide field, and they were performed 'without knowledge' by the observers. As our empirical evidence stands at present, no discussion of affective theory can afford to dismiss them without serious consideration.³⁰

Titchener³¹

Stumpf thinks that I should accept his theory of central sensory coexcitation were it not for my own view that affections lack the attribute of clearness.³² The mistake is natural, but is none the less a mistake. If my present view is wrong, and if the affective processes are not to be classed apart from sensations, then I believe that they must reduce, one and all, to complexes of organic sensations. I cannot yet assure myself that such reduction is possible; but I should, in fact, prefer almost any form of thorough-going sensationalism to the theory which brackets together cutaneous pain (which I find to be sometimes pleasant), and the disagreeableness of asafœtida, as qualities of a single sense.

Stumpf thinks, further, that I am inconsistent in objecting to his physiological hypothesis³³ when I give high praise to G. E. Müller's psychophysical theory of achromatic vision. What I wrote was this: "My objection is not by any means to psychophysics as such. I do object, however, to the basing of a psychological argument upon a speculative psychophysics. And we have a peculiar right to object, in the present instance, because Stumpf promised us a descriptive psy-

³⁰ Stumpf's concluding remark hinges on one of those terminological confusions which almost bring despair of mutual understanding. Kuelpe and all his observers distinguished *Schmerz* from the *Unlust* connected with it. "I cannot resist the impression," says Stumpf in comment, "that at bottom we both mean the same thing." But for Kuelpe pain is a quality of cutaneous sensation, and *Unlust* one of the two qualities of elementary feeling; *Lust und Unlust* are *elementare Bewusstseinsinhalte*. For Stumpf pain is an algedonic sensation, the equivalent of a sensory feeling, and corresponds with Kuelpe's pain *plus Unlust* (cf. the *durchaus komplett* of GE 17), while *Unlust* is an emotion, a function, not a content at all (*ib.*). So both Kuelpe and Stumpf distinguish *Schmerz* from *Unlust*, while they mean at bottom radically different things.

³¹ *Feeling and Attention*, 1908, esp. 81 ff.; *A*, 11 ff.

³² Stumpf has criticised this view a little hastily. Thus he argues (1) that not all sensations have the same attributes. True; but my point is that clearness is an essential attribute of sensation. He points out (2) that the epicure wallows in his enjoyment. No doubt: but his mind is occupied, I suppose, with things to eat and drink, not with his present pleasure in eating and drinking. (3) He quotes Johannes Müller to the effect that a sensation of pain becomes the more painful the more exclusively it is made the object of attention. For me too, however, the sensation of pain is thus made clearer; pain is for me a sensation.

³³ The statement that I devote sixteen pages (98-114) to this objection is due to sheer oversight. The objection ends on p. 101; then comes a discussion of affective imagery, pp. 101-104; then a discussion of the separability of algedonic images, pp. 104-111; then there is a return to psychophysics, pp. 112-113 (and this is what misled Stumpf); and finally a brief summary of Stumpf's paper, pp. 113-114.

chology." Müller's work is entitled *Zur Psychophysik der Gesichtsempfindungen*.³⁴

Finally, Stumpf accuses me—and makes Marshall his partner in the charge³⁵—of vacillation in the use of terms. My usage is, as a matter of fact, definite. I parallel affection, the feeling-element, with sensation; I parallel feeling, a complex of sensory and affective processes in which affection dominates, with perception; I parallel emotion with thought.³⁶ The instances to the contrary which Stumpf has brought together represent, not my usage, but that of the authorities I quote.³⁷ I cannot, for instance, translate Stumpf's *Schmerz* and *sinnliche Unannehmlichkeit* by the same English term.

*Ziehen*³⁸

Ziehen's affective theory, as set forth in the *Leitfaden* of 1891, may be summed up as follows. Every sensation has three attributes, quality, intensity, and affective tone. This last is not, however, a necessary attribute; only a limited number of sensations rise above or fall below the point of affective indifference. It is in its nature a qualitative attribute, and is itself intensively variable. Its qualities are two and two only; and since these qualities are added, as feelings of pleasantness and unpleasantness, to sensations and memory-images, it "represents as it were a sixth sense." Pleasantness and unpleasantness differ, nevertheless, from sensations proper. First, they cannot stand alone, though in the case of pain (which is not a specific sensory quality, but the feeling of unpleasantness which accompanies very intensive cutaneous sensations) we may think that we experience affective tone in complete independence of sensation. Secondly, they are coupled with memory-images. Thirdly, they depend upon very general properties of stimulus and receptor, and are correlated with "a reaction of the cerebral cortex to the stimuli which come to it from the outside."³⁹

This, the teaching of 1891, is also essentially the teaching of 1914.

³⁴ "I am very doubtful," says Stumpf, "whether Müller himself had any notion that his hypothesis was really solving the descriptive problem." If he will reread Müller's § 6 (*Zeits.*, x., 1896, 25-33) I think his doubt may be removed.

³⁵ Wrongly, as I thought on rereading Marshall; wrongly, as Marshall himself assures me. "I do find difficulties in connection with your terminology," writes Dr. Marshall in a personal letter (Decr. 7, 1916), "but I do not feel that they lead me astray as to your meaning; and certainly in the article referred to I was concerned to complain that you were influenced by sensationalistic ways of thought"—the interpretation I had myself put upon the passage to which Stumpf appeals.

³⁶ *Feeling and Attention*, 34; *Outline of Psychology*, 1902, 102, 224, 229.

³⁷ I find one breach of this rule in the lectures from which Stumpf quotes: on p. 49 I speak of general "views of feeling" in the sense of general theories of affective experience. Stumpf does not mention this lapse, and I therefore hope that he was not misled by it.

³⁸ *Leitfaden der physiologischen Psychologie*, 1914, esp. 222 f.; *Die Grundlagen der Psychologie*, esp. ii., 1915, 202 ff.; *A*, 17 ff., esp. 19, 34.

³⁹ *Leitfaden*, 1891, 28, 82 f., 84 f., 93 f. I have, for simplicity's sake, made no reference to the spatial and temporal attributes of sensation.

Pleasantness and unpleasantness are now not the sole but the principal or dimensional qualities of affective tone, and as such show varieties of qualitative shading. The identification of pain with unpleasant feeling has become a matter of interpretation; Ziehen still holds to it, on the ground that there is no demonstrative proof to the contrary. Affective tone remains an attribute of sensation, but is no longer coordinate with the other attributes; it is dependent upon them; it resembles them in that it cannot stand alone, but differs in that it may lapse and may vary intensively.—There are no further changes, either here or in the *Grundlagen* of 1915. The newer work comes, indeed, even closer to the exposition of 1891 (to which it expressly refers); for the attribute of affective tone, though it differs in many ways from the other attributes of sensation, is said nevertheless to be "entirely coordinate" with them.⁴⁰

Aside from the misuse of the term attribute—to which Ziehen sticks with the obstinacy of a man who has made a logical slip and will not be convicted of it—this theory is, on the whole, simple and consistent. Under certain conditions, which can be stated in general but have not yet been worked out in detail, the central excitatory process which underlies sensation and image involves a further excitatory process, also central, which is correlated with feeling. An affective quality then blends with the sensory quality of sensation or image. Such a view, Ziehen says, is "diametrically opposed" to the view of Stumpf.

He begins with pain: partly because Stumpf too begins with pain, but partly, no doubt, because the establishment of a pain-sense with specific end-organs would imperil his own theory. Pain for Ziehen is a feeling, and must therefore be centrally originated. We have seen that the positive statement of 1891 becomes a matter of interpretation in 1914; but Ziehen's opinion has not changed; "I maintain," he writes in 1915, "that pain represents nothing more than a quality which accrues to other [to sensory] qualities—contact, warmth, cold—and which is conditioned upon a process centrally superadded." He argues accordingly that even if special pain-spots and special pain-paths are demonstrated, they do not necessarily imply a specific sense-quality of pain; there are ways out of that conclusion. They are, however, by no means proved; still less is it proved that pain-quality may occur independently of cutaneous sense-quality.

All of which, be it said with respect, seems curiously roundabout. For Stumpf, pain is an algedonic sensation, the equivalent of the 'complete sense-feeling' of other psychological systems. It is peripherally excited, but stands (so far as intensity at any rate is concerned) under central influences. For Ziehen, pain is not a sensation of any kind, but a feeling proper, centrally excited. Yet the weight of evidence surely goes to show that pain is a cutaneous sensation, like pressure and warmth and cold, and that it may be (to use Stumpf's terms) either agreeable or disagreeable. Would not both Stumpf's and Ziehen's theories gain in simplicity and consistency if this evidence were accepted? Then the agreeableness or disagreeableness of pain would be, for Stumpf, a centrally coexcited algedonic sensation, for Ziehen a centrally originated feeling. Pain itself, the cutaneous sense-quality, would be out of discussion.

Meanwhile the discussion includes it. And Stumpf sharply rebukes Ziehen for overemphasizing the rôle of pain as algedonic sensation,

⁴⁰ *Leitfaden*, 1914, 47 f., 197 f., 200, 204, 220 f., 222, 224, 273 f.; *Grundlagen*, ii., 79, 217, 245.

its peripheral origin and its isolableness. These physiological matters, he declares, are for him secondary; and the group of algedonic sensations that stands in the forefront of his personal interest is not the peripheral group but the group that comes with central coexcitation.⁴¹ We have seen, however, that Ziehen had reasons of his own for disposing of pain at the start, and that he has his own theory as well as Stumpf's in mind when he labors at the peripheral problem. What, now, does he say of the concomitant sensations of central origin? He directly impugns them, and concludes that "in the higher sense-departments Stumpf's theory is not tenable." There are, he declares, two physiological possibilities. First, a sensory excitation may excite associatively the sensory center for pleasure-pain, the central area directly excited from the pain-spots and pleasure-spots of the periphery. In that case, however, we should expect the concomitant sensation of disagreeableness to show a resemblance to pain, and we should expect intensive change of the primary sensation to be paralleled by continuous and similarly directed change of the concomitant sensation. Neither expectation is realized, and this first possibility thus becomes highly improbable. Secondly, the central elements which are the seat of the coexcited algedonic sensations may be out of all connection with the periphery. In that case, however, we cannot account for their specific sensory energy; the unconnected central elements would stand in a class altogether apart; for there is no known sensory quality that depends solely on central excitation. The second possibility, then, is also highly improbable.

Stumpf's reply, summarised, is again that to him as psychologist these neurological considerations are irrelevant. And on the face of things he has the better of his opponent; Ziehen sometimes writes carelessly, and Stumpf is a keen controversialist. Yet one may doubt if he has grasped the real meaning of Ziehen's objections. The gist of the matter, for Ziehen, is that these pleasures and pains, these sensory agreeablenesses and disagreeablenesses, are *not sensations*, whether centrally or peripherally excited, whether independent or concomitant. He argues the issue in his own, predominantly physiological way; but his point throughout is that we know the class of sensations, and that the experiences whose nature is in dispute are, emphatically, not of that known class.⁴² When, therefore, Stumpf declares that, had he been better acquainted with Ziehen's position when he wrote the *GE*, he would unhesitatingly have cited it in confirmation of his own view,

⁴¹ "On this point," he writes, "Titchener has understood my doctrine almost more correctly [than Ziehen]; at all events he has understood it in the opposite sense." I am grateful for the praise, but—as my text goes on to show—I fear it is undeserved.

⁴² An instance may be useful. In *Leitfaden* 223 Ziehen asks: "How does the concomitant sensation come by its pleasurable or unpleasurable character?" and Stumpf rejoins: "It is agreeableness or disagreeableness." That is not a direct answer, because Ziehen is asking how a 'sensation' can come to be a 'feeling.' So in *Grundlagen* ii. 214 Ziehen asks: "Whence do these [central] elements derive their specific sensory energy in the sense of pleasure and pain?" and Stumpf returns: "I put the same question to him, in regard to his own 'affective tone.' The question is too much for either of us." But Ziehen is not asking why pleasure is pleasant and pain painful; he is asking how specific *sensory* qualities can appear under conditions which, by all physiological analogy, are inadequate to their arousal.

the obvious comment is that he would in that case have been stressing the physiological side of Ziehen's theory to the neglect of its psychological import. Conversely, when Ziehen, by a process of elimination, reduces the possibilities of central coexcitation to that which he himself assumes, his conclusion is that Stumpf's theory of algedonic sensations must therefore give way to his own theory of affective tones. Stumpf, aiming at a descriptive psychology, assimilates the two theories on the ground of physiology; Ziehen, writing in terms that are mainly physiological, is concerned to differentiate them on the ground of psychology.

In what sense, however, are the theories "diametrically opposed?" Ziehen's affective tone, a contingent attribute of sensation, has its own quality, intensity, and locality, and leaves an image behind it.⁴³ Is it so radically different from a concomitant sensation?—It differs by the very fact that it is affective tone, feeling proper, the primary source of emotion and mood and passion. Stumpf "draws the line," as he says, between algedonic sensation and emotion; the one is phenomenon, the other is function; there is no transition, logical or empirical, from sensation to feeling. That is the difference; and that is the reason why Ziehen, though he takes issue with every argument that he ascribes to theorists of a third type, who stand for an elementary affective process coordinate with sensation, still reserves his 'diametrical' opposition for the theory of Stumpf.

IV. THE MOTIVATION OF STUMPF'S THEORY

Stumpf appears to have arrived at his theory of algedonic sensation by a threefold path. It appeals to him, in the first place, from the side of logic. We have to choose between the theory of an independent affective element and the theory which identifies sense-feeling with sensation. The latter hypothesis is the simpler, and the scientific principle of economy thus throws the burden of proof upon its rival. Since, however, proof is not forthcoming,—since there is no positive character whereby sensation and simple feeling may be distinguished,—we are logically bound to make trial of sensationalism. That is the logical road to the *Gefühlsempfindungen*, and every theorist likes to have such a road at his disposal. Unfortunately, every theorist has! For Brentano might say that his single class of 'phenomena of love and hate' is simpler than Stumpf's duality of affective function and affective phenomenon; and Ziehen might say that his derivation of the emotions from a root of sense-feeling is simpler than Stumpf's denial of a logical transition from the one to the other. Logic indeed, as Stumpf in a neutral context would probably agree, must follow the facts and not precede them. If the facts are complex, no twist of logic can make them simple.

Secondly, Stumpf's theory appeals to him from the side of what is commonly called systematic psychology. In 1899 the sense-feelings are still feelings, but they are feelings "called forth directly by the sense-impression." There is thus a division in the affective group. On the one hand are the emotive (and kindred) states, which depend upon intellectual or volitional activity, present or past, and on the other hand are the directly stimulable feelings of sense. Stumpf does not base a formal argument upon this divergence,—as if experiences called forth directly by the sense-impression were *ipso facto* phenomena,—

⁴³ *Grundlagen*, ii., 221, 223.

but there can be no doubt that he is keenly sensible of it, and that his theory of emotion thus leads up to his theory of algedonic sensation. The outcome, for systematic psychology, is simply, as we have seen, that the line of cleavage is transferred from feeling to sensation. Stumpf recognises the new difficulty, and tries (unsuccessfully, as we also saw) to overcome it. Meanwhile his theory of emotion has passed from the stage of hypothesis to that of dogma;⁴⁴ the systematic line is drawn once and for all; and the sensations must accordingly make out for themselves the best case they may.

We have, however, not yet touched the heart of the matter. Stumpf's primary motive is his desire, thirdly, to account for the feelings aroused in us by tones. His interest in these feelings is deep and of long standing; and if he now speaks in general terms of the individual development and the generic evolution of the sense-feelings, it is nevertheless to tones that he immediately turns as offering the richest material for investigation, historical, individual, ethnographical. The theory of algedonic sensations enables him to cope with the recorded changes of affective reaction, and especially with those due to habitual direction of attention, to disposition of judgment, to habits of all kinds.⁴⁵ He does not go beyond the bare statement, and we can only guess that in his detailed treatment the emphasis would be rather on 'concomitant' than on 'sensation.' Would that—one must ask the question—would that so very much matter? Stumpf could give us a book on *Tongefühle* and *Tongefühlsempfindungen* such as no other psychologist can write. Why will he not turn his back on controversy and write it?

V. THE HISTORICAL BACKGROUND

There are not a few writers, Stumpf reminds us, especially among the philosophers of the 17th and 18th centuries, who "draw a sharp line of distinction between the sensory feelings, which have the character of sensation, and the emotions." In so far as this distinction is made by men who are not thorough-going sensationalists, it offers historical support to his own theory.

He first appeals to Descartes, and we grant without demur that Descartes distinguished sense-feeling from emotion. Stumpf's algedonic sensations are included by Descartes, along with hunger, thirst, warmth, cold, etc., among the perceptions that refer to our own bodies. They differ, accordingly, both from perceptions like color and sound, which refer to objects outside us, and from emotions; they are what we should today call organic sensations. In the large, then, Descartes agrees with Stumpf. When, however, we turn to the emotions, we find in Descartes a theory which is closely akin to that of James. Not only is the first draft of the theory like James' first statement, but the modification which it undergoes in the course of its working-out also anticipates the changes in James' later attitude. So far is Des-

⁴⁴ *GE*, 7, note 2.

⁴⁵ *GE*, 42, 44 ff.; *A*, 31. The tests of the bandsman N. (*Verlust der Gefühlsempfindungen im Tongebiete (musikalische Anhedonie)*, *Zeits.*, lxxv., 1916, 39 ff.) lead only to the conclusion that "the 'affective tone' is separable from the tones themselves, that is to say, is not an immanent attribute." Neither is it an immanent attribute for Brentano, for Kuelpe, for Ziehen, or for myself! The report is interesting, on various grounds, but it leaves the algedonic theory where it was.

cartes even from gross agreement with Stumpf that he here represents a view which Stumpf expressly rejects.⁴⁶

Malebranche, again, counts the sensations of pleasure and pain in the same list with sights and sounds, odors and tastes, and in a passage to which Stumpf refers contrasts the sensation of pain with the sorrow it produces. The ground of this "essential difference between sorrow and pain" lies, curiously enough, in the observation that sorrow "is always pleasant to it self," "is ever agreeable, when there's occasion to be mov'd by it." The theory of emotion which Malebranche represents is, for the rest, as Lange himself points out, an anticipation of the vasomotor theory.⁴⁷

Hume regards the bodily pleasures and pains as impressions of sensation, and the passions as impressions of reflexion. So far he supports Stumpf. But "hunger, lust, and a few other bodily appetites" are not sensations but passions, arising from "a natural impulse or instinct." There is, moreover, "an original instinct" whereby the mind tends to hold fast to pleasure and to avoid pain, so that "in order to produce an affection of any kind, 'tis only requisite to present some good or evil." That is not Stumpf's doctrine.⁴⁸

We come next to Kant, whose distinction of the *sinnlich angenehm* from the *wohlgefällig* is, as Stumpf says, well known. Yet Kant's psychology is a psychology of faculties, and Kant is the first who explicitly ranges the faculty of feeling alongside those of cognition and desire.⁴⁹ The *Anthropologie* instructs us, in detail, that the *Gefühl der Lust und Unlust* is not to be classed with the vital sensations; these sensations are related to emotion, but are not themselves emotions.⁵⁰ Emotion, on the other hand, is a feeling, and ought to be discussed under that heading, though for convenience it will be postponed to the section which treats of the faculty of desire.⁵¹ Finally, "we pass judgment upon pleasure and pain [*Vergnügen und Schmerz*, which are *Gefühle der Lust und Unlust*] by a higher satisfaction or dissatisfaction [*Wohlgefallen oder Missfallen*] with ourselves, namely the moral." So that Kant marks off the sense-feelings from sensations, groups them with the emotions, and draws in moral terms the distinction which Stumpf as psychologist approves. Kant's phrases, however, are psychologically significant: for dissatisfaction with a pleasure is called a 'bitter joy,' and satisfaction with a pain is called a 'sweet pain.'⁵²

There remains Johannes Müller, who enumerates as the 'modes' or 'energies' of the *Gefühlssinn* pressure and contact, tickle and itch, lust, pain, warmth and cold.⁵³ The list has a very modern look, and there is no mention of *Lust und Unlust*. These are, in fact, said to be "presented states of conation" (*vorgestellte Strebungszustände*).⁵⁴

⁴⁶ A, 3; D. Irons, *Descartes and Modern Theories of Emotion*, *Phil. Rev.*, iv., 1895, 291 ff.

⁴⁷ Cf. my *Text-book of Psychology*, 1910, 479; N. Malebranche, *Treatise concerning the Search after Truth*, 1700, 104 f.

⁴⁸ D. Hume, *A Treatise of Human Nature*, ed. L. A. Selby-Bigge, 1888, 438 f.

⁴⁹ W. Volkman von Volkmar, *Lehrbuch der Psychologie*, ii., 1885, 302.

⁵⁰ I. Kant, *Anthropologie in pragmatischer Hinsicht*, 1798, 46 f., 223.

⁵¹ *Ib.*, 176. ⁵² *Ib.*, 179 f.

⁵³ *Handbuch der Physiologie des Menschen*, ii., 1840, 249, 497 f.

⁵⁴ *Ib.*, 537.

"All passions," we are told, "may be reduced to *Lust*, *Unlust* and desire, and all alike contain as elements: presentation of the self or of the individual life, presentation of the magnitudes opposed to the individual life, inhibiting or furthering it, self-preservative conation, and inhibition or furtherance of that."⁵⁵ Here is a theory of emotion which differs from Stumpf's in that a reference to self is made an integral part of every emotive state.⁵⁶ And if Müller had held to his terminology, everything would have been in order. As a matter of fact, he does not. Conation is inhibited, in the simplest case, by pain or disagreeable bodily sensation; it is furthered, in the simplest case, by bodily sensation of well-being and pleasure (*Lust*).⁵⁷ The adjectives 'agreeable' and 'disagreeable' are thus used both of feelings and of sensations; pleasure is both a state of conation and a bodily sensation; well-being is both a bodily sensation and an emotion.⁵⁸ We must accept the formal list of sensations and the formal definition of *Lust und Unlust*, and we may suppose that Müller, having thus safeguarded himself, is at no further pains to avoid the looseness of expression current in his day;⁵⁹ but even so it would seem that he finds a qualitative likeness between *Schmerz-Wollust* and *Unlust-Lust*.⁶⁰ How all this can bring comfort to Stumpf, it is difficult to see.

Cold comfort, indeed, is all that can be expected from the appeal to history. For every systematist will make a difference between sense-feeling (or algedonic sensation) and emotion.⁶¹ But if the line is drawn for reasons of philosophy, then the distinction has no relevance for psychology; and if it is drawn for reasons of psychology, then all of those reasons must be taken into account and given their due weight; we may not stress a resemblance here and slur a difference there. Stumpf's doctrine is that a separate sense-department furnishes algedonic sensations, for the most part concomitant and centrally excited, whose dimensional qualities are pleasure and pain. Algedonic sensations and emotions are heterogeneous; there is no logical connection between them, nor is it possible to pass empirically, by intermediate processes, from the one to the other; Hume's "easy transition from pleasure to love" involves a leap from phenomenon to function. For emotions are functions, feelings based on immanent judg-

⁵⁵ *Ib.*, 539. Müller uses 'passion' as the equivalent of *Gemüths-bewegung* in general; *ib.*, 525, 539.

⁵⁶ *Ib.*, 538: "Das Selbstgefühl ist ein Element aller Leidenschaften." Another difference is that Müller regards aesthetic 'feeling' as purely intellectual: *ib.*, 537.

⁵⁷ *Ib.*, 540 f.

⁵⁸ *Ib.*, 258, 537; 537, 541; 540, 541.

⁵⁹ It is noteworthy that in this discussion he nowhere employs the terms *Schmerzgefühl* and *Unlustempfindung*. Even in the prolegomena to the book *On the Senses*, where *Gefühl* is the name of a sense-department, *Schmerz* is only very occasionally called a *Gefühl* (259, 263); the rule throughout is *Schmerzempfindung*. The phrase *Empfindung der Unlust*, on the other hand, occurs (so far as I have read) only once, in the discussion of the temperaments (578), and then on a page which has already made *Unlust* a *Gemüthsbewegung*! As a rule the bracketing of *Lust*, *Unlust* and *Begierde* (*Begehrung*) is strictly adhered to.

⁶⁰ *Ib.*, 258, and *Phant. Gesichterscheinungen*, 1826, 88 (a passage quoted by Stumpf).

⁶¹ *A*, 36.

ments, and functions and phenomena have nothing whatsoever in common unless it be time. A sensationalistic theory of emotion is therefore a psychological blunder. Functions and phenomena are mingled in our experience, and relations between them are directly given, but the task of the psychologist is, precisely, to analyse what is empirically linked and blended.⁶²

If, now, we are looking for historical antecedents of this doctrine, we shall surely have in mind central sensory concomitance, immanence of judgment, mutual exclusiveness of predicates. We find, however, that emotion may be distinguished from algedonic sensation, and yet may itself be explained in James' or Lange's way; that higher and lower feelings may be distinguished, and yet may both alike be feelings proper; that algedonic sensation may be distinguished from emotion, and yet may bear a qualitative likeness to emotion. Stumpf's historical background turns out to be a dissolving view.

CONCLUSION

The outcome of this review is that Stumpf's *apologia* has not improved his position. He seeks to persuade us by argument rather than by exhibition of facts. If, however, we are to judge by logic, then Brentano, with whom Stumpf naturally compares himself, still maintains the advantage. Suppose that I find an odor disagreeable. According to Brentano, I experience the act of hating the act of sensing the physical odor; I have a true emotion; to find a thing disagreeable is as much as to dislike it. According to Stumpf, I experience in the simplest case the act of remarking the concomitant sensation within a phenomenal blend composed of odor and concomitant disagreeableness; whereas, if I dislike the odor, I experience an interweaving of the acts of judging and hating the concomitant sensation within the phenomenal blend. The real strength of Stumpf's doctrine lies, not in any claim to logical simplicity, but rather in its surrender of logical simplicity at the command of facts, namely, of its author's observations of tonal feeling. We have found, in the foregoing pages, that psychologically the algedonic sense is unlike any known sense-department, and that physiologically the status of the centrally excited concomitant sensations is precarious. The algedonic sensations are, nevertheless, the result of Stumpf's study of tonal feeling, just as his doctrine of fusion is the result of his study of tonal sensation: only in the one case he has given us his empirical evidence, while in the other he tantalises us by generalities. In science, however, facts are always stronger than arguments, and the doctrine of fusion itself has won its way by detailed and reiterated appeal to fact. If Stumpf's affective psychology is to make converts, we must have the fourth volume of the *Tonpsychologie*.

⁶² *A*, 35; *EF*, 4 f., 6 f.